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10/565,195

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Soo-han Park

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EXAMINER

PENDLETON, DIONNE

ART UNIT

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2627

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/565,195 | <b>Applicant(s)</b><br>PARK ET AL. |  |
|                              | <b>Examiner</b><br>DIONNE PENDLETON  | <b>Art Unit</b><br>2627            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-17 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Allowable Subject Matter*

1. The indicated allowability of claims 1 and 3-17 is withdrawn in view of the newly discovered reference(s) to **Kosoburd (US 2003/0206503)**. Rejections based on the newly cited reference(s) follow.
2. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 and 3-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kosoburd (US 2003/0206503)** in view of **Izumi (US 6,778,475)**.

### **Regarding claims 1 and 13,**

Kosoburd teaches a photo detector for, when light emitted from a two-wavelength light source is divided into at least three light components to be reflected by

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an optical recording medium, detecting the reflected light components, the photo detector comprising:

a first detector (**"40d", fig. 4; [0054]**) divided into no more than eight sections detecting the at least three light components reflected by the optical recording medium to convert the light components into a first set of electrical signals;

a first calculating portion (**"23" in figure 8**) calculating a first tracking error signal from the first set of electrical signals converted by the first detector by a differential push-pull method (**see Fig. 11A; [0082]**);

and

a second calculating portion (**"23", fig. 8**) calculating a first focusing error signal by an astigmatism method (**see Fig 10; [0078]**) and calculating a second tracking error signal by a differential phase detection method (**see Fig 11B; [0086]**) from the first set of electrical signals converted by the first detector.

In paragraph [0072], Kosoburd teaches that the apparatus may comprise a first and a second detector for DVD and CD detection respectively, but fails to explicitly teach that the second detector calculates a second focusing error signal and a third tracking error signal as claimed.

Izumi teaches a second detector (**"410"- "412" in figure 9**) divided into four sections detecting the at least three light components reflected by the optical recording

medium to convert the at least three light components into a second set of electrical signals;

and a third calculating portion (*the examiner has interpreted parts “88”-“99” in figure 9, as corresponding at least in part to the “third calculating portion”*) calculating a second focusing error signal by the astigmatism method (*see FE signal for a CD, in figure 9*) and calculating a third tracking error signal from the second set of electrical signals converted by the second detector (*see TE signal for a CD, in figure 9*). Though Izumi fails to expressly teach that the third tracking error signal is calculated by a differential phase detection method. However, **column 15, lines 48-53** of the Izumi reference discloses that the differential phase detection (DPD) method is well known in the art for calculating tracking error. Additionally, **column 13, lines 30-33** teach that the tracking error signal may be detected from a push-pull method OR from a DPD method.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the CD signal detecting circuit of Kosoburd, per the teachings of Izumi, so that the disk reader of Kosoburd, which operates to read from both CD and DVD type disks, may calculate error signals, and other control signals which would permit the optimized reading of data from a CD disk.

**Regarding claim 3,**

Kosoburd teaches the photo detector according to claim 1, wherein the optical recording medium is one among a DVD-R, a DVD+RW, a DVD-RW, and a CD ([0034]).

**Regarding claim 4,**

Kosoburd teaches a switching portion (80) selectively outputting either the first tracking error signal or the second tracking error signal in accordance with a type of optical recording medium ([0072]); Izumi teaches a switching portion (79) selectively outputting either the first tracking error signal or the second tracking error signal in accordance with a type of optical recording medium (column 16:30-35).

**Regarding claim 5,**

Kosoburd fails to teach that the switch selectively outputs a tracking error signal based upon whether the optical recording medium is one among the DVD-R, the DVD+RW, and the DVD-RW, and when the optical recording medium is the DVD ROM.

Izumi teaches that the switching portion (79) selectively outputs the first tracking error signal calculated by the first calculating portion when the optical recording medium is one among the DVD-R, the DVD+RW, and the DVD-RW, and wherein the switching portion selectively outputs the second tracking error signal calculated by the second calculating portion when the optical recording medium is the DVD ROM (column 16:30-62 and column 17:40-53).

**Regarding claim 6,**

Izumi teaches the photo detector according to claim 3, wherein the third calculating portion calculates the second focusing error signal and the third tracking error signal when the optical recording medium is the CD (see column 15:34-53 and column 16, line 51 through column 17, line 53).

**Regarding claim 7,**

Kosoburd teaches the photo detector according to claim 1, wherein the first detector is a DVD sensor and the second detector is a CD sensor ([0072]).

**Regarding claim 8,**

Kosoburd teaches the photo detector according to claim 7, wherein the DVD sensor includes a first central sensor (40d, fig. 4) and first and second peripheral sensors (40a, 40g, fig. 4).

**Regarding claim 9,**

Kosoburd teaches the photo detector according to claim 8, wherein the first central sensor is divided into four regions and the first and second peripheral sensors are each divided into two regions.

**Regarding claim 10,**

Kosoburd teaches the photo detector according to claim 9, wherein a 0 order beam is incident on the first central sensor, a +1 order beam is incident on the first peripheral sensor and a -1 order beam is incident on the second peripheral sensor.

**Regarding claim 11,**

Kosoburd fails to teach generating a first and second tracking error signal as specifically claimed. Izumi teaches the photo detector according to claim 7, wherein the DVD sensor generates the first tracking error signal using the differential push-pull method when the optical recording medium is a DVD-R or a DVD+/-RW and the DVD sensor generates the second tracking error signal using the differential phase detection method when the optical recording medium is a DVD-ROM (column 17, lines 40-51).

**Regarding claim 12,**

Izumi teaches that the first tracking error signal is used for tracking a servo of an optical pick-up when the recording medium is a DVD-R or a DVD+/-RW (column 23:31-27 teaches detecting tracking error for DVD-R type disks).

**Regarding claim 14,**

Kosoburd teaches the photo detector according to claim 13, wherein the first detector (40d, 40a, 40g in fig 4) is divided into eight detecting regions (A, B, C, D, L, M, J, K), while Izumi teaches that second detector is divided into four detecting regions (see "310" (m-p), or see "410"- "412" in figure 10).

**Regarding claim 15,**

Kosoburd teaches the photo detector according to claim 13, wherein the first detector is a DVD sensor and the second detector is a CD sensor (In paragraph [0072], Kosoburd teaches that the apparatus may comprise a first and a second detector for DVD and CD detection respectively).

**Regarding claim 16,**

Izumi teaches the photo detector according to claim 15, wherein the DVD sensor includes a first central sensor (40d, fig. 4) and first and second peripheral sensors (40a, 40g, fig. 4).

**Regarding claim 17,**

Izumi teaches the photo detector according to claim 16, wherein the first central sensor is divided into four regions and the first and second peripheral sensors are each divided into two regions.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/  
Examiner, Art Unit 2627

/Wayne Young/  
Supervisory Patent Examiner, Art Unit 2627